

## QUARTERLY REPORT

### CARNEGIE CORPORATION OF NEW YORK

July, 1955

## Wanted: Teachers and Scholars



SOME four million young Americans will be in college in ten years. Who will teach them? And how good will the teaching be?

One educator recently reminded his colleagues, when speaking of the rising wave of students: "Teach them!" we will be told. But it is we who will insist on teaching them *well*." His remark points up the truism that good education begins with good teachers. The vigor and quality of higher education depend upon the steady flow into the academic profession of talented young people, and upon their continued enthusiasm and skill once they are engaged in careers of teaching and scholarship.

Two programs directed toward meeting these requirements have been initiated by those who insist on "teaching them *well*." One, the national Woodrow

Wilson fellowship program, is aimed at recruiting into the profession young men and women who possess the highest qualities of intellect, character, and personality. The other, the Social Science Research Council's faculty research fellowship program, offers opportunities for gifted young scholars to combine significant research and effective teaching.

### *The Woodrow Wilson Program*

The Woodrow Wilson program, which is the academic profession's first organized recruiting effort, is the brain child of Whitney J. Oates, now chairman of Princeton University's department of classics and of its newly formed Council of the Humanities. As a Marine on Pelelieu Island during World War II,

Mr. Oates spent a good deal of time reflecting on the teaching profession to which he would return.

"I was impressed by many of the boys who were around me all during the war," he says. "So many of them had all the qualities of a good teacher: intelligence, imagination, vigor. Yet most of them were confused and completely undecided about what they would do when they got back home. I kept wishing that some of that natural talent could be channeled where it belonged—in teaching."

Mr. Oates's concern for individuals was heightened by his concern for his profession. He remembered that it had lost most of one college generation because of World War I. He also realized that uncertainty about a career is not confined to soldiers, but is shared by most college students during the early years of their studies. He could see that sometimes a boost at the right moment can direct promising students into fields where their talents will be put to the best use.

When he returned to Princeton, Mr. Oates campaigned vigorously for the establishment of a coherent recruiting program for higher education.

In 1945 the first four Woodrow Wilson fellowships, for one year of free graduate study, were offered by the University.

The program's growth in its first decade has been impressive. More than 400 young men and women are now teaching or en route to careers in college teaching who might have been lost to the profession had it not been for the Woodrow Wilson program.

The first four fellows, whose awards totaled \$2500 in value, represented the fields of classics, politics, history, and modern language. Ten years later, for the academic year 1955-56, the interests of 159 appointees range through 19 fields of learning. Thirty-seven will pursue advanced work in English; 29 in history. Other popular choices are political science, philosophy, economics, and modern languages.

The first four fellows were all Princetonians. Next year's fellows represent 109 colleges and universities located in 34 states, the District of Columbia, and five Canadian provinces.

As the program has developed from a small effort

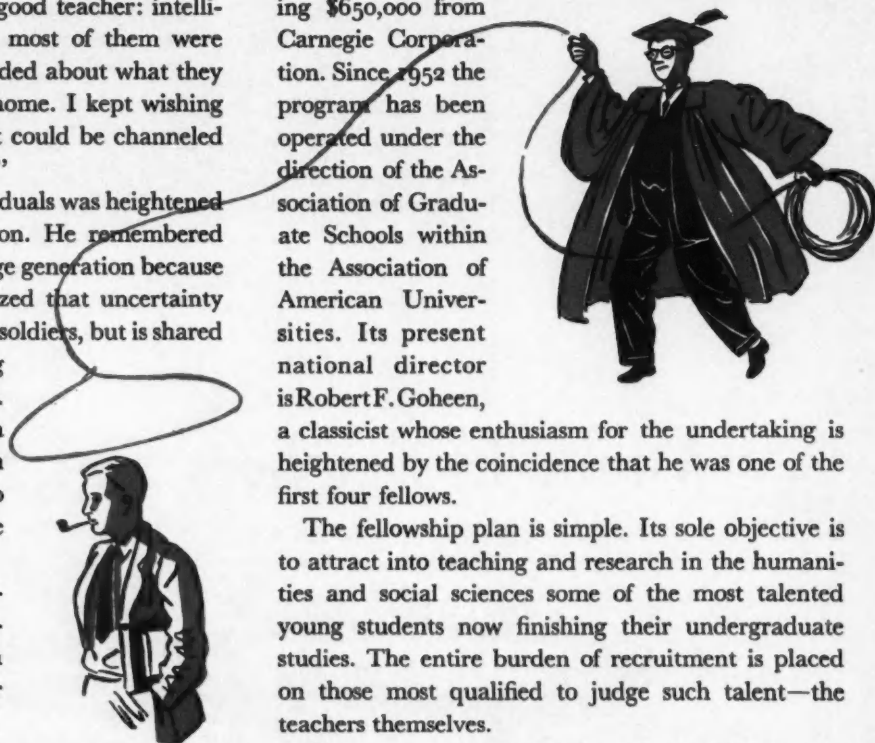
by one university to a continent-wide recruiting endeavor by the entire teaching profession, the fellowships have been financed by substantial contributions from graduate schools and foundations, including \$650,000 from Carnegie Corporation. Since 1952 the program has been operated under the direction of the Association of Graduate Schools within the Association of American Universities. Its present national director is Robert F. Goheen, a classicist whose enthusiasm for the undertaking is heightened by the coincidence that he was one of the first four fellows.

The fellowship plan is simple. Its sole objective is to attract into teaching and research in the humanities and social sciences some of the most talented young students now finishing their undergraduate studies. The entire burden of recruitment is placed on those most qualified to judge such talent—the teachers themselves.

The program is not designed primarily for the student who has always wanted to teach. It is for the student who may never have thought of an academic career, or who is undecided about it, but in whom his professors see a spark of real teaching talent. No student can seek the award; it can come to him only after nomination by his teachers.

Competition for the fellowships is rigorous: there were more than 1500 candidates, representing 450 schools, for next year's 159 awards. Those nominees who are successful are guaranteed an adequate living for a year of study and training at any of the graduate schools in this country and Canada. They are under no obligation to enter the academic profession, but are asked only that they give its possibilities their most serious consideration.

Does such a non-coercive policy really attract promising talent to teaching—talent which might otherwise be lost to occupations whose inducements and rewards seem more compelling? Only after a number of years can the program's actual impact



upon the academic profession be measurable, but of those appointed in the first years of the program 80% are now in advanced graduate study or already teaching. Sixty-nine former Woodrow Wilson fellows are now teaching in 42 institutions. Three of them are already department chairmen.

Statistics alone fail to show important by-products of the program. Many candidates, although not finally elected, are encouraged to pursue teaching careers through being nominated and considered. Among those who are chosen, the psychological effect of the confidence expressed in these young people at a critical stage of their development often may be of even greater importance than the stipend itself.

Probably the most important effect of all, in its long-range implications, is the fact that every professor in every liberal arts department in the United States and Canada can be a conscious and active scout for his profession. Because of the teachers' own efforts to strengthen their own profession, undoubtedly hundreds of former Woodrow Wilson fellows will be teaching in our institutions when the great plateau of student enrollments is reached by the 1960's.



### *Faculty Research Fellowships*

The job of ensuring the quality of the academic profession does not end with recruitment. The initial enthusiasm, the liveliness of mind that first attracted attention, need to be preserved. College administrators have found that one of the best ways of accomplishing this is to allow a teacher some time for creative activity outside the seminar room or lecture hall, some time to pursue independent intellectual interests

and do original research. Such research has been found to contribute not only to the advancement of knowledge, but to the growth of the teacher as a person and to his effectiveness in the classroom.

The Social Science Research Council's faculty research fellowship program, which has received \$930,000 from Carnegie Corporation, allows promising young social scientists to carry on research during their most creative years. Recipients are freed from one-half their teaching duties for a period of three years and provided with funds for research in fields of their own choosing.

The Council invites senior professors and academic administrators throughout the country to nominate junior colleagues whom they consider outstanding for the half-dozen appointments which are made each year. As one person connected with the program observes: "We try to pick the very best people and then give them their heads. Often their research leads them to adventure in unusual or virtually unexplored fields. It is not easy to obtain grants for such projects through other channels, for the results, if any, can't be predicted. But we believe that if we get the best-qualified young social scientists, they are more than likely to come out with something good. It's a calculated risk worth taking."

Often the fellows' projects cross several academic fields. One grantee for next year is a political scientist who has also done a great deal of advanced work in psychology. He will bring to bear his knowledge of both fields in attempting to explore the psychological components of political—particularly voting—behavior.

A woman grantee, trained in philosophy, has become deeply interested in the logic of the social sciences. As a faculty research fellow, she plans to undertake research in the field of social psychology and at the same time to examine the assumptions underlying research by social scientists.

Such a program's benefits are not limited to the research fellows themselves. Their students profit from the more stimulating teaching; their schools—which have freed them from half their teaching loads at considerable inconvenience—profit from the new vigor and interest they bring to the campus. Certainly their profession and, in the long run, society itself benefit from their contributions to the advancement of knowledge.



# The Search for Talent

THE oldest and most respected precept in foundation operations is "to find the good men and back them." And the purest application of the principle is to be found in fellowship programs.

Most fellowship programs go a step further. They not only try to find the good men, but try to find them early in their careers. In short, the typical fellowship program is "prospecting" for talent. There is no more useful and rewarding form of philanthropy.

This long-established activity of foundations gains new significance in the light of present needs. Never has America been more in need of its ablest men and women. The trend of technology and the complexities

of modern life have made unprecedented demands for intelligence and specialized training. No longer can we afford to waste talent.

All of the evidence available indicates that we *are* still wasting talent. Great numbers of young people with exceptional native gifts never make use of those gifts and never achieve the full development which their talents promised.

Thus there remains an immensely challenging task for responsible Americans. And it is a task which requires attention at all levels of the educational system.

Carnegie Corporation has concerned itself chiefly with higher education. The undertakings described in these pages are representative of the programs it has supported at this level: programs which seek out talent and provide opportunities for its fullest development. ■

## Testing for Language Talent

"She has an ear for language . . ."

"He's wonderful in math, but he just can't pass his language requirements . . ."

These familiar phrases express a conviction which language teachers and, especially, their students have long shared: some individuals have a greater natural aptitude for learning foreign languages than others do.

But how does one recognize this aptitude in advance? The United States's present world position has increased its demands for linguists, and there are obvious advantages in being able to identify people who have special language aptitude.

Testing people for such ability *before* their gift—or lack of it—has been demonstrated in the classroom has been done by Harvard University's linguist and psychologist John B. Carroll. With the aid of a grant from Carnegie Corporation, he and his principal associate, Stanley M. Sapon, have brought principles of psychology, linguistics, language teaching, and educational testing to bear on the search for factors

involved in foreign language learning.

Testing for language aptitude poses some problems not met in other types of tests. Language ability is not di-

rectly dependent upon general intelligence alone. A person with a slightly higher than average IQ may learn a second language with greater speed than a person with an extremely high IQ. For in addition to mastering the intellectual problems connected with language learning—the handling of symbols, the retention of meanings, and so on—the learner must possess other gifts: the ability to recognize subtle differences in sounds and inflections, and to reproduce them intelligibly.

Since many factors are believed to play a part in language learning, John Carroll and his colleagues have devised a battery of tests designed to identify and measure the various basic skills in language ability. Earlier tests of language aptitude had focused almost exclusively upon the skills involved in reading and writing a language. While not neglecting these aspects, Mr. Carroll has devoted special attention to the skills involved in speaking and understanding the spoken language. Because of this, the tests may



be particularly useful in predicting success in the newer "linguistic" approaches to language teaching.

Film strips and tape recordings as well as paper-and-pencil tests are used. Some of these tests measure the student's vocabulary, reasoning powers, word fluency, and ability to memorize.

### *Artificial Languages*

In order to put students to the test of actually learning a language, Mr. Carroll and his group created two artificial languages—"Tem-Tem" and "Perdaseb"—whose grammar and sound systems are very different from English and other familiar languages. Students are given some time to learn the grammar, spelling, and sounds of

one of these languages, and are then tested.

So far, the tests have been given to more than 4,000 students in several universities and Air Force language programs as well as at the U. S. Military Academy. The tests were administered just before the students started foreign language study, and their scores were later compared with their achievement in the actual language courses. In order to determine the relation of age and academic level to achievement, 1,000 high school students and 2,000 elementary school pupils were also tested. The correlation between the students' performance and what had been predicted on the basis of the tests has been promising.

On the question of whether there is a special linguistic aptitude, however, there is no good answer as yet. Consideration of the nature of some of the tests, nevertheless, throws interesting light on the problem. Mr. Carroll has found the following types of tests to be particularly good as predictors of successful language learning: those which measure an individual's verbal ability, or knowledge of his own language; those showing the ability to form associations between written symbols and speech sounds; work-sample tests which require a student to learn a miniature artificial language; tests of simple rote memory; and finally, a test which registers an individual's "grammar sense."



## Talent for Technology

which is apparent in the nation's youth. They realize that probably no nation in the world's history has surpassed this one in its confidence that the methods of scientific inquiry can lead to discoveries which will substantially improve human life. As a natural result of this belief, scientists and technicians in the United States are ranked high, both in prestige and in the tangible rewards they receive.

### *The Paradox*

Why, then, do American youngsters dislike the study of science even while fascinated by its products?

Educators believe that the reasons for this paradox are probably diverse. One obvious one is that science and mathematics are difficult subjects, requiring an exceptional amount of mental effort and exercise. For this reason, the secondary school teaching of these subjects is particularly important. Students must be well-grounded in the fundamentals, yet inspired to see beyond the immediate drudgery to the excitement of learning more about the

physical universe in which they live.

The program to be undertaken by the AAAS will include efforts to encourage science departments of universities and colleges to provide better undergraduate and graduate training for future teachers through needed changes in entrance requirements, courses, and programs. The Association will cooperate with state departments of education, local school officials, and teachers colleges to increase the number of qualified teachers. It will encourage the establishment of special short-term training programs: some for people who wish to return to teaching after years of absence; others for undergraduates who decide to become teachers too late to take all the required education courses. The Association also plans to experiment in a few regions by providing experienced and well-qualified high school teachers as consultants to inexperienced teachers.

The AAAS, with approximately 50,000 members throughout the United States, has affiliated with it 258 other scientific organizations.

Almost every American youngster is preoccupied with thoughts of rocket ships, atomic submarines, and jet planes. Certainly the society in which he lives places strong emphasis on technology. Yet year by year, the number of high school graduates interested in and prepared for advanced study in science and mathematics is declining.

Concerned over the dwindling number of potential scientists and technicians in the face of the nation's rising need, Carnegie Corporation recently made a grant of \$300,000 to the American Association for the Advancement of Science (AAAS) for a nation-wide program to improve the teaching of mathematics and science in the secondary schools.

Public officials, educators, and scientists themselves have been increasingly concerned and puzzled by the alarming distaste for these subjects

## PERSONS & PLACES

### Staff Appointment

Frederick Jackson will join the Corporation staff in September as an executive assistant.

Mr. Jackson, a scholar in American history and contemporary civilization, received a B.A. from Brown University and M.A. and Ph.D. degrees from the University of Pennsylvania.

He taught history at Marietta College for two years, and has been in the history department at the University of Illinois since 1950. He is the author of a biography of the Connecticut lawyer, statesman, and social scientist Simeon Eben Baldwin. The book, *A Jurist from New England*, was published by the King's Crown Press this year.

### Education "Down Under"

Stephen H. Stackpole, executive associate in charge of the Corporation's program in British Commonwealth areas, has returned to New York from a 30,000-mile trip during which he visited almost every institution of higher learning in Australia and New Zealand. His was the third visit to the area by a Corporation officer since 1947.

During his ten weeks abroad Mr. Stackpole talked with more than 700 people concerned with educational activities in the two countries. Many of them were among the 253 Australians and New Zealanders who have visited the United States since the war under Carnegie Corporation grants.

"Everyone who has had a travel grant spoke of the stimulating effect of experience abroad," Mr. Stackpole says. "Beyond this, I was given a mass of evidence to indicate tangible results of these trips—the introduction of new teaching methods, reorganizations of departments and laboratories, and above all a fruitful and continuing ex-

change of information and ideas with colleagues in the United States."

Mr. Stackpole was particularly interested in what plans Australian and New Zealand universities may have to meet the increasing enrollments and the demands of society for trained people at various levels. Although the setting is very different, their problems are basically the same as those facing American higher education.

During his visit the University of Sydney conferred on Mr. Stackpole an honorary LL.D.

### Corporation Officers Attend Conferences

Two conferences on higher education in the British Commonwealth—one in Canada, the other in the West Indies—were attended by several Carnegie Corporation officers in June.

Canadian educators gathered in Toronto for the 31st annual meeting of the national conference of Canadian universities. James A. Perkins, vice president of the Corporation, Stephen H. Stackpole, executive associate in charge of the British Commonwealth program, and executive assistants Alan

Pifer and Robert J. Wert attended symposiums on the economic problems of Canadian universities and the increase in student enrollments expected in the next ten years. Discussion centered on ways in which institutions of higher education can meet these problems, and led to consideration of what the function of the universities should be in relation to national needs at this time.

The principals of seven British colonial universities and university colleges met in Jamaica to discuss common problems facing their institutions. Mr. Pifer and Mr. Stackpole attended the West Indies conference, which the Corporation supported with a grant of funds.

Present at the meeting were the heads of institutions in Rhodesia, Nigeria, Uganda, Malaya, the Sudan, the Gold Coast, and the West Indies. Also represented was the Inter-University Council for Higher Education Overseas (London), an organization established by British universities to assist in the development of the colonial universities.

The principals discussed a number of specific problems and policies, and gave consideration to the general directions which their institutions are likely to take in the years ahead.

## NEW GRANTS

Grants amounting to \$2,874,000 were voted by the Carnegie Corporation trustees during the last quarter. Of these grants, \$2,474,000 were made from income for the fiscal year 1954-55, now estimated at \$7,815,000. From this sum, \$3,133,000 was appropriated earlier in the fiscal year, which began October 1, 1954, and \$2,159,000 has been set aside to meet commitments, including those for teachers' pensions, incurred in previous years.

A balance of \$49,000 of the current income remains to be appropriated in

the remainder of the fiscal year. It is the Corporation's policy to spend all income in the year in which it is received.

Included among the grants voted during the last quarter are those listed below:

### United States

American Association for the Advancement of Science, for a program to improve the teaching of science and mathematics in secondary schools, \$300,000.

American Council on Education, to



compile information on scholarships, \$14,500.

Brooklyn Public Library, for a reading improvement program, \$85,000.

Brown University, for internships in general education, \$50,000.

University of California, for research on brain organization and behavior, \$55,000.

Carnegie Institution of Washington, toward support of the Yerkes Laboratories of Primate Biology, \$50,000.

Colgate University, for new courses for juniors and seniors, \$137,500.

Common Council for American Unity, for translation and publication of a handbook for immigrants, \$25,000.

Harvard University, for international studies, \$750,000.

Hobart and William Smith Colleges, to revise their general education program, \$17,500.

Massachusetts Institute of Technology, for research and conferences on American studies, \$150,000.

Mills College, to strengthen its program of American studies, \$70,000.

Mount Holyoke College, for interdepartmental courses for seniors, \$100,000.

National Association of Student Personnel Administrators, for training seminars, \$40,000.

National Planning Association, toward a study of the role of American business in foreign countries, \$50,000.

University of Notre Dame, for a study of engineering education, \$35,000.

Oberlin College, for a study of art and music in the liberal arts curriculum, \$25,350.

Occidental College, toward support of a history of civilization course, \$60,000.

University of Omaha, for scholarships in college business management, \$60,000.

University of Pennsylvania, to strengthen its program of American studies, \$150,000.

Social Science Research Council, for studies in the field of state government, \$150,000.

Stanford University, toward an evaluation of its general education program, \$20,000.

Temple University, to study its liberal arts program and introduce general education courses, \$83,000.

### *British Commonwealth*

Association of Universities of the British Commonwealth, toward support

of the Quinquennial Congress to be held in Canada in 1958, \$75,000.

University College, Ibadan, Nigeria, for nutritional studies, \$13,400.

Royal Institute of International Affairs, toward the revision of Lord Hailey's book, *African Survey*, \$11,000.

Royal Technical College of East Africa, for library development, \$10,000.

## THE CORPORATION TRUSTEES

### Caryl P. Haskins



THE newest Carnegie Corporation trustee is Caryl P. Haskins, who was elected at the May board meeting. Although Mr. Haskins is best known as a scientist, his ranging interests are revealed by his travels to almost every part of the earth, his authorship of books and articles on a variety of subjects, and his membership in such organizations as the Council on Foreign Relations and the British Royal Society of Arts.

A native of Schenectady, New York, Mr. Haskins was graduated from Yale. After several years' work with the General Electric Company, graduate study took him to Harvard University, where as a John Harvard Fellow he earned his Ph.D. and won election to Sigma Xi and Phi Beta Kappa. In 1935, he set up the Haskins Laboratories, a non-profit educational in-

stitution for basic research and research training.

During World War II, Mr. Haskins rendered distinguished service to the government in a number of assignments with the National Research Council, the National Defense Research Committee, and the Office of Scientific Research and Development. He received honors from both the United States and the United Kingdom for his contributions to the war effort: the Certificate of Merit, from his own country; the King's Medal for Service in the Cause of Freedom, from the British. During the postwar period he has served as a consultant to the U. S. departments of State and Defense.

Next January, Mr. Haskins will succeed Vannevar Bush as president of the Carnegie Institution of Washington.

The Amazon region of South America has been one of his lively interests; today Mr. Haskins' foreign interests lie particularly in the Far East. He has recently returned from a long trip to Southeast Asia.

Mr. Haskins is the author of research papers which have appeared in various journals, as well as articles for more general publications such as the *Atlantic Monthly* and *Foreign Affairs*. He has written three books: *Of Ants and Men*, *The Amazon*, and *Of Societies and Men*.



## High Pressure in High Places

A man's brain is about a foot above his heart, as the blood flows. A giraffe's brain is about 13 feet above his heart—and *how* the blood flows has always astounded medical scientists.

In any vertebrate, the maintenance of sufficient arterial pressure to provide an adequate supply of blood to the brain is a critical function. In the giraffe, the mechanism by which the blood is moved to such a height without bursting the pumping organ or an artery has been a mystery. Its solution may shed light upon common afflictions of the human heart.

The first clues to this puzzle have been uncovered by a lively, German-born South African now traveling in the United States on a grant from Carnegie Corporation. Dr. Robert H. Goetz, head of the University of Cape Town's department of surgical research, last summer measured the blood pressure of a giraffe, the first time the delicate undertaking has ever been accomplished.

"We all thought it was a crazy idea at first," Dr. Goetz admits. "Giraffes are hard to get—and harder to handle."

Nevertheless the surgeon organized an expedition, and last August the

little caravan made its way into South Africa's northeastern Transvaal in search of subjects for experiment.

The expedition's first efforts to capture the huge creatures, with special arrows provided with curare, a drug which produces temporary paralysis, failed. "We had always known the giraffe's outer skin is an inch thick," Dr. Goetz says ruefully, "and that was confirmed in a most spectacular way when our arrows

bounced right off it!" Eventually most of the tests were conducted on a "small" (only 13-foot-tall) giraffe which had been caught in the bush and corralled.

"People had had lots of theories about the physiology of the giraffe," Dr. Goetz says, "and the main one was, of course, right. That is that it has high blood pressure!"

### Measurements in Mercury

At the base of the young giraffe's neck the pressure measured 360 millimeters of mercury. Blood pressure of about 150 mm. is considered normal for a human being. Even in the brain, seven feet above the heart, the giraffe's pressure reached 200.

The brain measurements were taken

by making an incision in the base of the neck, passing a plastic tube up through the main neck artery, and reading off the pressure on an electric gauge. Strangely, pressure registered in the brain remained constant even when the animal's head was lowered to drink.

Although physiologists have advanced different theories about how the blood manages to reach the brain—some speculating that it is helped along by peristalsis in the main neck artery, others that there is a "U-tube" arrangement of arteries and veins—Dr. Goetz believes that the giraffe's heart is itself strong enough to force the blood up unaided.

"The heart is a tremendous organ," he reports. "Weighs 25 pounds. The aorta is as big as my wrist. The walls of the left ventricle are eight centimeters thick; they're about one centimeter in a man."

The outcome and implications of Dr. Goetz's investigations have excited interest in physiological and surgical research fields all over the world. During the four months that he is traveling in this country, he is consulting other doctors who are working on circulatory problems. Specialists in aviation medicine have shown particular interest in his work, hoping that the findings may have some relevance to the "black-out" problem encountered by aviators during high speed maneuvers.

Dr. Goetz himself, however, refuses to predict what ultimate significance his studies may have.

"Research is done for its own sake," he insists. "Its application, if any, comes later."

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